

Expedition 545 (holotype, KUN; isotype, CAS).
Figure 2.

Haec species *Swertia chirayitae* (Roxb. ex Fleming) H. Karst. et *S. lurida* (D. Don) C. B. Clarke similis, sed ab ambabus foliis caulinis lineari-lanceolatis usque linearibus base attenuatis, lobis calycis lineari-lanceolatis atque lobis corollae apice acuminatis caudatisque, a hac corolla purpurea 5–7 mm longa bene distincta.

Annuals, 60–70 cm tall, glabrous; stems erect, distinctly edged, branched from middle. Basal leaves in 2 or 3 pairs, withered at anthesis; petioles 2–3 cm; leaf blades narrowly elliptic, $2\text{--}4 \times 0.2\text{--}0.3$ cm, apex obtuse, base narrowed, midvein distinct; stem leaves in 7 to 10 pairs, sessile, $2.5\text{--}6.5 \times 0.2\text{--}0.5$ cm, smaller toward stem apex, linear-lanceolate to linear, apex acute, margin revolute, veins 3, abaxially distinct, base narrowed and narrowly decurrent along stem. Inflorescences as panicles of cymes, lax, many-flowered, spreading branched; pedicels 4–18 mm. Flowers 4-merous; calyx and corolla rotate, lobed to near base; calyx 3.5–5 mm; lobes linear-lanceolate, slightly unequal, apex subacute, margin entire, midvein prominent; corolla 5–7 mm, pale purple; lobes elliptic, apex acuminate and shortly caudate; nectaries on corolla lobes, 2 per lobe, oblong, radially elongated, with a narrow marginal scale, raised with many long fimbriae; stamens with the filaments linear, 3.2–3.5 mm; anthers ellipsoid, 1–1.2 mm; style 1–1.2 mm, linear; stigma lobes oblong. Capsules sessile, ovoid to ovoid-ellipsoid, 5–6 mm; seeds subglobose, 0.5–0.6 mm diam., brown; seed coat finely reticulate.

Distribution and habitat. *Swertia lihengiana* is endemic to northwestern Yunnan Province in China and is known only from the type localities, with two populations of 30 to 50 plants. It occurs in evergreen forests or on sandy riverbanks at elevations between 1300 and 1400 m.

IUCN Red List category. Due to the rarity and limited distribution of *Swertia lihengiana*, this species is assessed here as Endangered (EN) according to the IUCN Red List criteria Blab(i,ii,iii) (IUCN, 2001).

Etymology. *Swertia lihengiana* is named after Li Heng at the Kunming Institute of Botany, Chinese Academy of Sciences, in appreciation of her great contribution to phytotaxonomy and phytogeography in China and in recognition of the Dulongjiang Expedition where she first collected this new species.

Relationships. *Swertia lihengiana* resembles the Himalayan species *S. chirayita* (Roxb. ex Fleming) H. Karst. and *S. lurida* (D. Don) C. B. Clarke, but differs from both by the linear-lanceolate to linear stem leaves with the base narrowed, the lanceolate calyx lobes, and the acuminate and shortly caudate corolla lobes. It further differs from *S. lurida* by the purple corolla that is 5–7 mm long. *Swertia lihengiana* may be distinguished from these allied species by the following key.

KEY TO SPECIES ALLIED TO *SWERTIA LIHENGIANA* IN CHINA
AND ADJACENT HIMALAYAN REGIONS

- 1a. Stem leaves linear-lanceolate to linear, base narrowed; calyx lobes linear-lanceolate; corolla lobes acuminate and shortly caudate; northwestern Yunnan, China *S. lihengiana*
- 1b. Stem leaves ovate-triangular to ovate-elliptic, base cordate to orbiculate, $\pm$ amplexicaul; calyx lobes ovate; corolla lobes acute.
 - 2a. Flowers smaller: calyx lobes $0.5\text{--}2 \times 0.5\text{--}1$ mm, corolla lobes $2\text{--}3 \times 1\text{--}1.5$ mm; Kashmir, Nepal, India *S. lurida*
 - 2b. Flowers larger: calyx lobes $3\text{--}5 \times 1\text{--}2$ mm, corolla lobes $4\text{--}7 \times 1.5\text{--}3$ mm; Nepal, eastern India, Sikkim *S. chirayita*

Paratype. CHINA. **Yunnan:** Gongshan, Dulongjiang, Dandangwanggo, in evergreen forests, 1400 m, 19 Jan. 1991 (fr.), *Dulongjiang Expedition 3323* (KUN).

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New Combinations in *Schoenoplectus* (Cyperaceae) from China

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ABSTRACT. Five new combinations in *Schoenoplectus* (Rchb.) Palla (Cyperaceae) are proposed for taxa occurring in China. All these taxa previously had been placed in *Scirpus* L. s.l., which has been split into segregate genera in the recent literature. The following transfers are made for taxa originally described from China: *Schoenoplectus chuanus* (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang, its type from Jiangsu; *S. jingmenensis* (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang, from Hubei; *S. monocephalus* (J. Q. He) S. Yun Liang & S. R. Zhang, from Anhui; *S. pseudoarticulatus* (L. K. Dai & S. M. Huang) S. Yun Liang & S. R. Zhang, from Hainan; and *S. supinus* (L.) Palla subsp. *densicorrugatus* (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang, from Xinjiang.

Key words: China, Cyperaceae, *Schoenoplectus*, *Scirpus*.

The genus *Scirpus* L. (Cyperaceae) has been demonstrated to be heterogeneous, and it has been split into segregate genera (Wilson, 1981; Haines & Lye, 1983; Zhan & Yang, 1987a, b, c; Bruhl, 1995; Goetghebeur, 1998; Kukkonen, 1998; Muasya et al., 1998, 2000, 2001; Smith & Hayasaka, 2001, 2002; Pignotti & Mariotti, 2004). Although previously treated as a single genus in *Flora Reipublicae Popularis Sinicae* (Tang & Wang, 1961), Chinese *Scirpus* s.l. segregates into the six genera *Actinoscirpus* (Ohwi) R. W. Haines & Lye, *Bolboschoenus* (Asch.) Palla, *Isolepis* R. Br., *Schoenoplectus* (Rchb.) Palla, *Scirpus*, and *Trichophorum* Pers. This follows the scheme of Goetghebeur's 1998 classification and will correspond to our treatment of the Cyperaceae for the *Flora of China*.

Accordingly, five taxa from *Scirpus* s.l. distributed in China are transferred here into *Schoenoplectus* as new combinations. Four of these taxa (*Scirpus chuanus* Tang & F. T. Wang, *S. jingmenensis* Tang & F. T. Wang, *S. monocephalus* J. Q. He, and *S. pseudoarticulatus* L. K. Dai & S. M. Huang) were previously considered in *Scirpus* but are all characterized by a group of morphological traits (stolon presence, tuber presence, nodeless culms, culm-like bracts, and pseudolateral inflorescences) that currently delimit *Schoenoplectus* (Wilson, 1981; Smith & Hayasaka, 2001).

1. ***Schoenoplectus chuanus*** (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang, comb. nov. Basionym: *Scirpus chuanus* Tang & F. T. Wang, Fl. Reipubl. Popularis Sin. 11: 222. 1961. TYPE: China. Jiangsu: Nanjing, watery places, 17 Aug. 1931, K. L. Chu 341 (holotype, PE).

Distribution. *Schoenoplectus chuanus* is only known from Jiangsu, China.

Specimen examined. CHINA. **Jiangsu:** Jurong, M. B. Deng 3640 (PE).

2. ***Schoenoplectus jingmenensis*** (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang, comb. nov. Basionym: *Scirpus jingmenensis* Tang & F. T. Wang, Fl. Reipubl. Popularis Sin. 11: 222. 1961. TYPE: China. Hubei: Jingmen, 27 Sep. 1940, H. Migo s.n. (holotype, PE).

Distribution. *Schoenoplectus jingmenensis* is only known from Hubei, China.

Specimen examined. CHINA. **Hubei:** Jingmen, s.d., H. Migo s.n. (PE).

3. ***Schoenoplectus monocephalus*** (J. Q. He) S. Yun Liang & S. R. Zhang, comb. nov. Basionym: *Scirpus monocephalus* J. Q. He, Acta Phytotax. Sin. 37(3): 291, f. 1. 1999. TYPE: China. Anhui: Fuyang, riversides, 8 June 1994, J. Q. He & X. L. Hou 5438 (holotype, Herbarium of Resources Plants, Anhui University not seen).

Distribution. *Schoenoplectus monocephalus* is only known from Anhui, China.

Specimen examined. CHINA. **Anhui:** Fuyang, J. Q. He 5493 (PE).

4. ***Schoenoplectus pseudoarticulatus*** (L. K. Dai & S. M. Huang) S. Yun Liang & S. R. Zhang, comb. nov. Basionym: *Scirpus pseudoarticulatus* L. K. Dai & S. M. Huang, Fl. Hainan. 4: 538. 1977. TYPE: China. Hainan: Yiaxian, 19–29 May 1935, S. K. Lau 5746 (holotype, IBSC).